

ABSTRACT

**THE COMPARISON BETWEEN SMOOTHING EXPONENTIAL
LINEARHOLT METHODAND ARIMA IN FORECASTING THE
NUMBER OF CHRONIC RENAL FAILURE'SHEMODIALYSIS VISIT
(Study at RSUD Prof. Dr. WZ Johannes Kupang)**

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Exponential smoothing method is one of time-series analysis, and forecasting method by giving a weighted value on a series of previous observations to predict the future value. ARIMA methods fully utilize past data and current data to produce accurate forecasting. ARIMA method will work well if the data in the time series used are dependent or related to each other statistically.

This research includes a study design non-reactive (non-reactive research) by usingsecondarydata, because the data obtained from subjects without needed treatment. In this study the method of Holt 'Linear Exponential Smoothing and ARIMA used to analyze secondary data hemodialysis, every month the number of visits recorded in the medicalrecord at Prof. Dr. W. Z Johannes Kupang Hospital during the period January 2009 to April 2014. Steps to analyze the data was to create a time series plot of the data and then determined or estimated the parameters and test the suitability of the model has been obtained. took somepredictions for the next period based on the model that has been obtained. After that, compared the value of the smallest forecasting error between the methods of Holt' Linear Exponential Smothing and ARIMA method on number of hemodialysis visits with MAPE (Mean Absolute PercentageError), MAD (Mean Absolute Deviation) and MSD (Mean Square Deviation).

The results of this study were obtained from the best model of Holt method' Linear Exponential Smothing with α (level) = 0.99 and γ (trend) = 0:01 = 22:19 MAPE, MAD and MSD = 85.72 =24200.9 and ARIMA methods MAPE = 39.85, MAD = 99.4 and MSD = 16151.8. The conclusion that the best method to predict the number of hemodialysis visits at Prof. Dr. W. Z Johannes Kupang Hospital was Holt Linear Exponential Smoothing method.

Keywords: Holt' Method, ARIMA Method, HemodialysisVisit